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ABSTRACT

A causal model of reactions to violence that incorporated the role of attribution processes, emotions, in-group bias, and cognitive development was studied with children 8-12 years old. Participants were 121 third and sixth graders who attended a private elementary school in southern California. In groups of six, subjects were presented one of a series of vignettes reporting an incident of violence in a sports competition at school. Photographs illustrated the vignettes. Measures of perceived intentionality and controllability, emotions experienced while listening to the story, prescriptions of punishment, and judgments concerning likelihood of retaliation were obtained on one-to-five scales. The model was analyzed using Bentler's (1989) techniques for the analysis of structural equations. Results suggested that attribution processes, in-group bias, and age play a role in children's reactions to violence. The mediating role of anger was supported. A version of the proposed model, expanded to incorporate a developmental factor, was examined and found to fit the data exceptionally well. A table and seven figures are included. (Author/RH)

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# Examination of an Attribution-Emotion Model of Reactions to Violence in Children

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ABSTRACT

The purpose of the present research was to examine a causal model of reactions to violence which incorporated the role of attribuiton processes, emotions, ingroup bias, and cognitive development in children ages eight to twelve. The model was analyzed using Bentler's (1989) techniques for the analysis of structural equations. Results supported a role of attribution processes, ingroup bias, and age (grade) on children's reactions to violence as well as the mediating role of anger and perceived attributional properties (intentionality and controllability). A version of the proposed model, expanded to incorporate a developmental (grade) factor, was examined and fit the data expeptionally well $X^2(7)=4.80$, $p=.68$, NFI=.982

## Analysis of an Attribution-Emotion Model of Reactions to Violence in Children

The objective of the present research was to study reactions to violence in children between eight and twelve years of age. A causal model of reactions to violence integrating the role of attribution processes, interpersonal emotions, and ingroup bias as determinants of reactions to violence was tested and developmental trends were examined using Bentler's (1989) program for the analysis of structural equations.

The present research was guided by the propositions of a model of reactions to violence previously tested with adults (Betancourt & Blair, 1989, 1990), propositions concerning ingroup bias (Betancourt, 1990), and developmental trends suggested by theories of cognitive development (e.g. Piaget, 1948; Kohlberg, 1969; Langer, 1969). A graphic representation integrating these propositions is presented in Figure 1.

First, according to Figure 1, the perceived attributional properties of controllability and intentionality influence emotions and reactions to violence. This is expected to be so for children of both third and sixth grade. The perception of a violent action as more intentional and caused by more controllable factors is expected to result in more anger and more violent reactions. Second, ingroup bias is also expected to influence children's perception of attributional properties, anger towards the aggressor, and reactions to the violent action. In this case, higher levels of perceived controllability,

intentionality of the violent action, and negative emotions, as well as lower levels of empathic emotions are expected for outgroup aggressors than for an ingroup aggressors. Finally, consistent with developmental theories predicting changes in cognitive development between the 8 and 12 years of age, it is proposed that cognitive development (third versus sixth grade) will influence children's perception of attributional properties as well as the role of these attributional processes in reactions to violence. The responses of sixth graders concerning emotions and reactions are expected to be more influenced by attributional variables than those of third graders.

The following experiment was designed to test the causal model represented in Figure 1. In addition, the proposed developmental trends were examined within the context of the causal model.

## Method

### Subjects

Participants were 121 third and sixth grade students, from a private elementary school in Southern California. Informed consent was obtained from the parents and a candy bar for their participation was given to the children. Participants in each grade were randomly assigned to one of the six experimental conditions created by a 3 (attribution situation suggesting different degrees of controllability and intentionality) X 2 (ingroup versus outgroup aggressor).

Instrument and Procedure

The children, who were taken from their classroom to a small room in groups of six, were instructed to imagine that they were in a team with their classmates playing a basketball game against a team from another class. They were asked two trial questions to make sure that they understood the situation and became familiar with the situation and instruments. Then, children were presented with one of a series of vignettes reporting an incident of violence in a sports competition which takes place in school. The story described a basketball game between a team from the subject's grade (ingroup) and that of another grade (outgroup). The story concludes when a member of one team jumps and causes a member of the opposing team to fall and become injured. In one version of the story an ingroup victim is injured by an outgroup player while in another version an outgroup victim is injured by an ingroup player. Three versions of each of these two vignettes were formed by manipulating information suggesting different degrees of controllability and intentionality.

A series of photographs were used for a slide presentation designed to illustrate the story to the children. These photographs depicted children being instructed how to play the game, the act which results in injury, and the victim being treated by a nurse.

Measures of perceived intentionality, controllability, emotions experienced while listening to the story, prescriptions

of punishment, and judgments concerning likelihood of retaliation were obtained on one-to-five scales anchored at the extremes. These scales consisted of five circles increasing in size to indicate increments in the corresponding variable.

## Results

### Preliminary Analyses of Proposed Relationships

A series of analyses of variance (ANOVAs) were conducted to examine the effects of the situations intended to manipulate the attributional properties of controllability and intentionality as well as the ingroup versus outgroup manipulation. As expected, subjects in the intentional-controllable situation reported higher perceived intentionality than subjects in the controllable-unintentional and the uncontrollable-unintentional conditions (see Figure 2), $F(2) = 65.97$, $p<.0001$. Also, children in the controllable-intentional and controllable-unintentional conditions reported higher perceived controllability than those in the uncontrollable-unintentional condition (see Figure 2), $F(2) = 32.73$, $p<.0001$.

Anger toward the aggressor and pity toward the victim were significantly affected by group identification. Children in the outgroup-aggressor condition reported more anger toward the aggressor and pity toward the victim than children in the ingroup-aggressor condition, $F(1) = 33.85$, $p<.001$ and $F(1) = 51.32$, $p<.001$, respectively (see Figures 3 and 4).

In addition, as observed in Figure 3, results for the subjects in the outgroup-aggressor condition suggest that anger

was also affected by the attribution situation. Specifically, anger was higher for subjects in the controllable-intentional condition than for subjects in the other two conditions.

Severity of punishment prescribed for the aggressor was directly influenced by group identification. As observed in Figure 5, children in the outgroup-aggressor condition prescribed more severe punishment for the aggressor than those in the ingroup-aggressor, $F(1) = 108.32$, $p<.001$. Punishment was also influenced by the manipulation of attributional properties $F(2) = 5.52$, $p<.005$. However, this effect was only observed in the outgroup condition, and more so for the sixth graders than for the third graders (see Figure 5). Finally, a significant effect of group identification was observed on likelihood of a violent retaliation (see Figure 6), $F(1) = 4.94$, $p<.05$.

The correlation analyses reported in Table 1 suggest that interpersonal emotions relate to both attributional properties and the dependent variables of punishment and retaliation. This is consistent with the proposition that interpersonal emotions mediate the relationships between attribution processes and reactions to violence.

Overall, the results support the proposed role of both attribution processes and group identification on children's reactions to violence in conflict situations. These results with children also corroborate previous evidence found with adults, suggesting that emotions mediate the influence of attribution processes on violence and reactions to violence.

Test of Causal Models

Bentler's (1989) program for the analysis of structural equations (EQS) was used to test a model including all the propositions represented in Figure 1. The EQS output for the test of this model is presented in Figure 7. The model fit the data quite well, $X^2(4)=3.95$, $p=.41$, NFI=.984.

A second model, identical to the first one but incorporating the effects of grade was tested. This model also fit the data exceptionally well, $X^2(7)=4.80$, $p=.68$, NFI=.982. These results as well as the comparative analysis of specific parameters within each model are discussed in terms of the implications for the developmental study of attribution processes, human aggression, and the use of violence in conflict situations.

In addition to supporting the proposed role of cognitive (attribution) processes and emotions in reactions to violence (Betancourt & Blair, 1990), the present results suggest interesting developmental aspects. For example, as observed in Figure 3, anger seems to be more affected by attributional properties when the aggressor is an outgroup individual. However, the difference in punishment reported by subjects in the different attributional conditions appears more significant and systematic in the case of sixth graders than for third graders. This suggests that although younger children use attribution information in their decisions concerning punishment and retaliation, such information seems to be more important for sixth graders than for third graders. This confirms propositions

concerning the relationship between cognitive development and the use of attributional information in interpersonal judgments and behavior.

Table 1

Correlations Between Grade, Group, and Attribution Situations, Attributional Properties, Emotions, Punishment, and Retaliation.

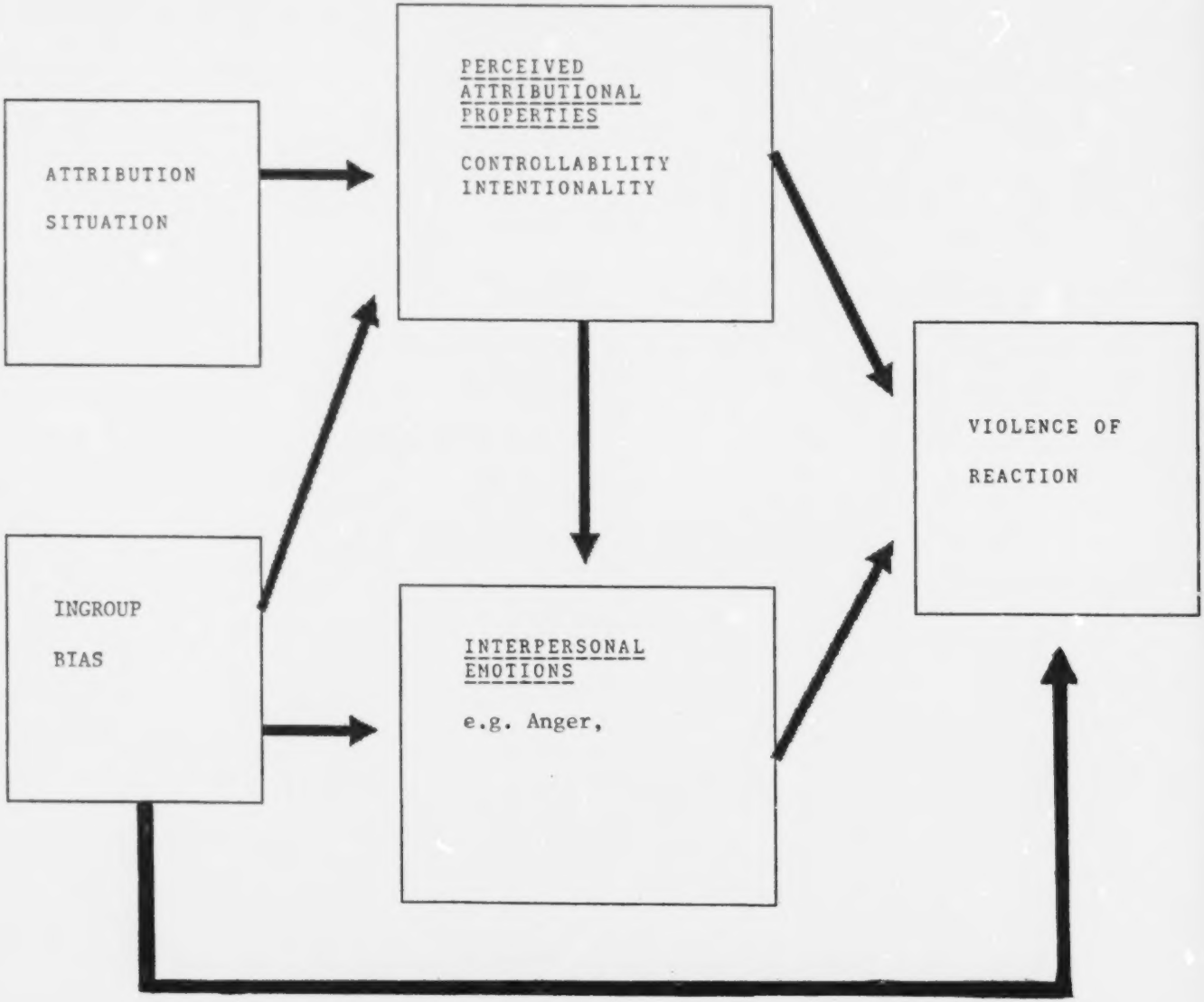
| | | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|
| 1. | Grade | -.07 | .13 | -.09 | .09 | .02 | .22** |
| 2. | Group | -.06 | .17* | .46*** | .55*** | .65*** | .19* |
| 3. | Attribution Condition | .54*** | .65*** | .17* | -.01 | .08 | .15 |
| 4. | Perceived Controll-ability | | .25** | .02 | .12 | -.01 | -.06 |
| 5. | Intention-ality | | | .38*** | .11 | .30*** | .29*** |
| 6. | Anger toward Aggressor | | | | .44*** | .57*** | .22** |
| 7. | Pity toward Victim | | | | | .43*** | .04 |
| 8. | Punishment of Aggressor | | | | | | .29*** |
| 9. | Retaliation | | | | | | |

* p<.05 ** p<.01 *** p<.001

N = 120

Figure 1

A Graphic Representation Integrating the Main Propositions of the Study



# Perceived Attributional Properties

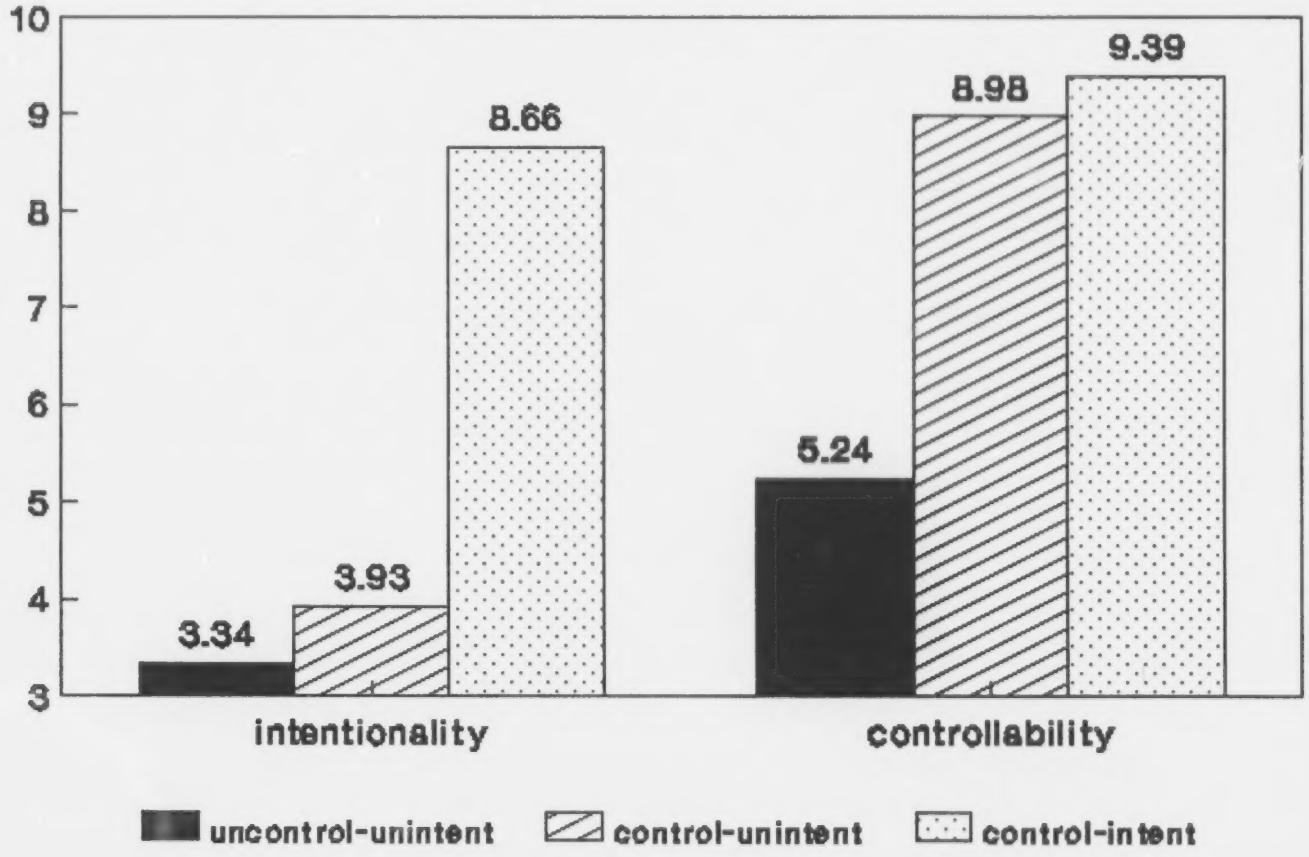



Figure 2

# Anger Toward Aggressor

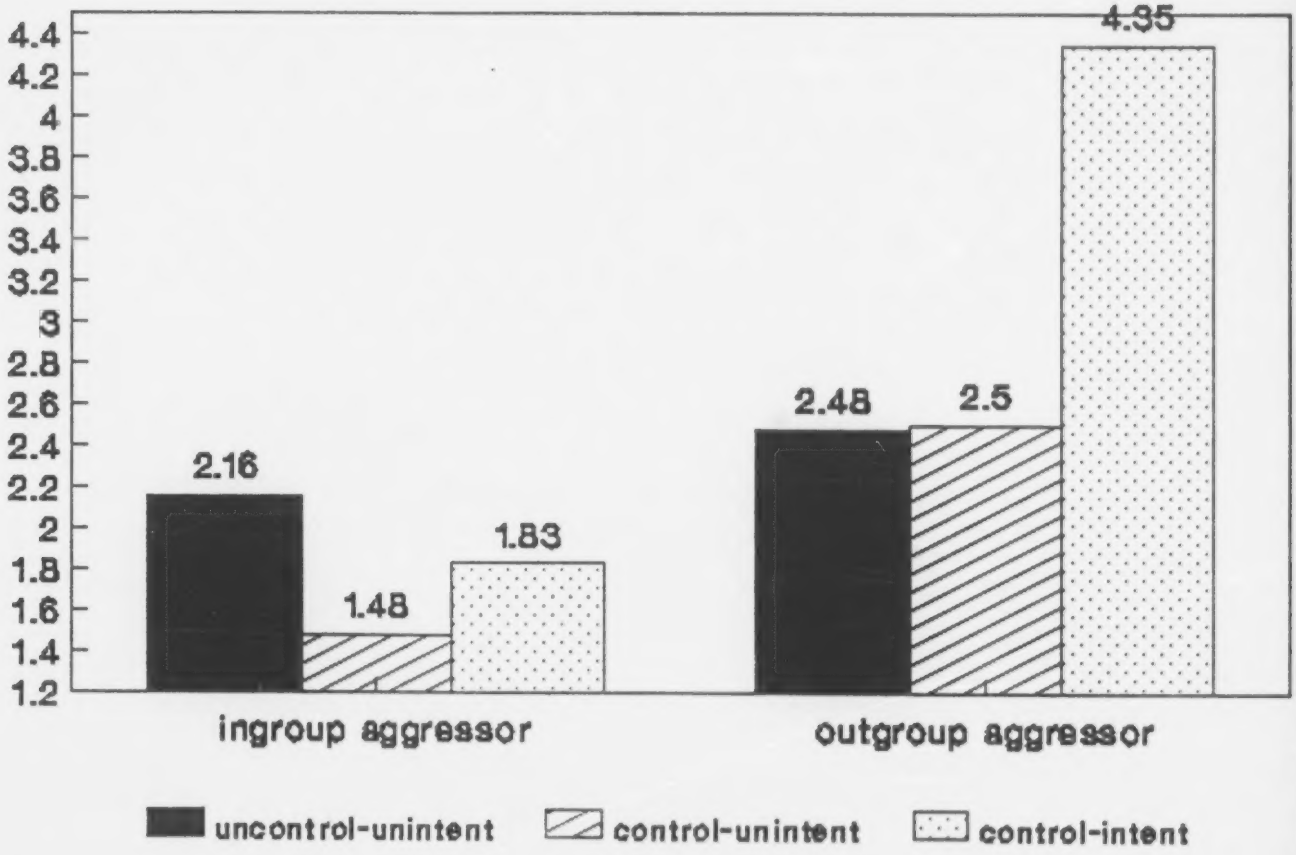



Figure 3

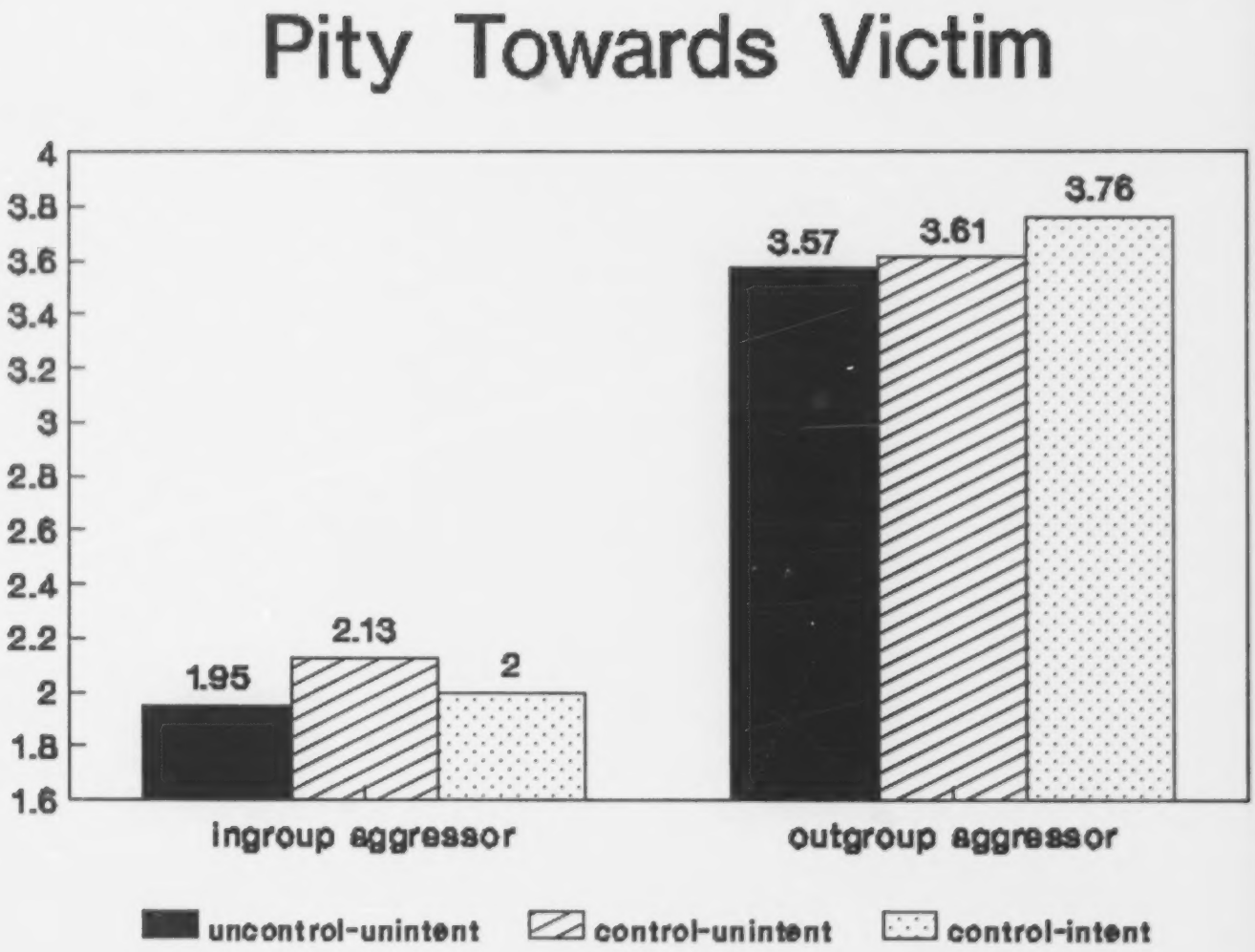

Pity Towards Victim
4
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.95
2.13
2
3.57
3.61
3.76
ingroup aggressor
outgroup aggressor
uncontrol-unintent
control-unintent
control-intent

Figure 4

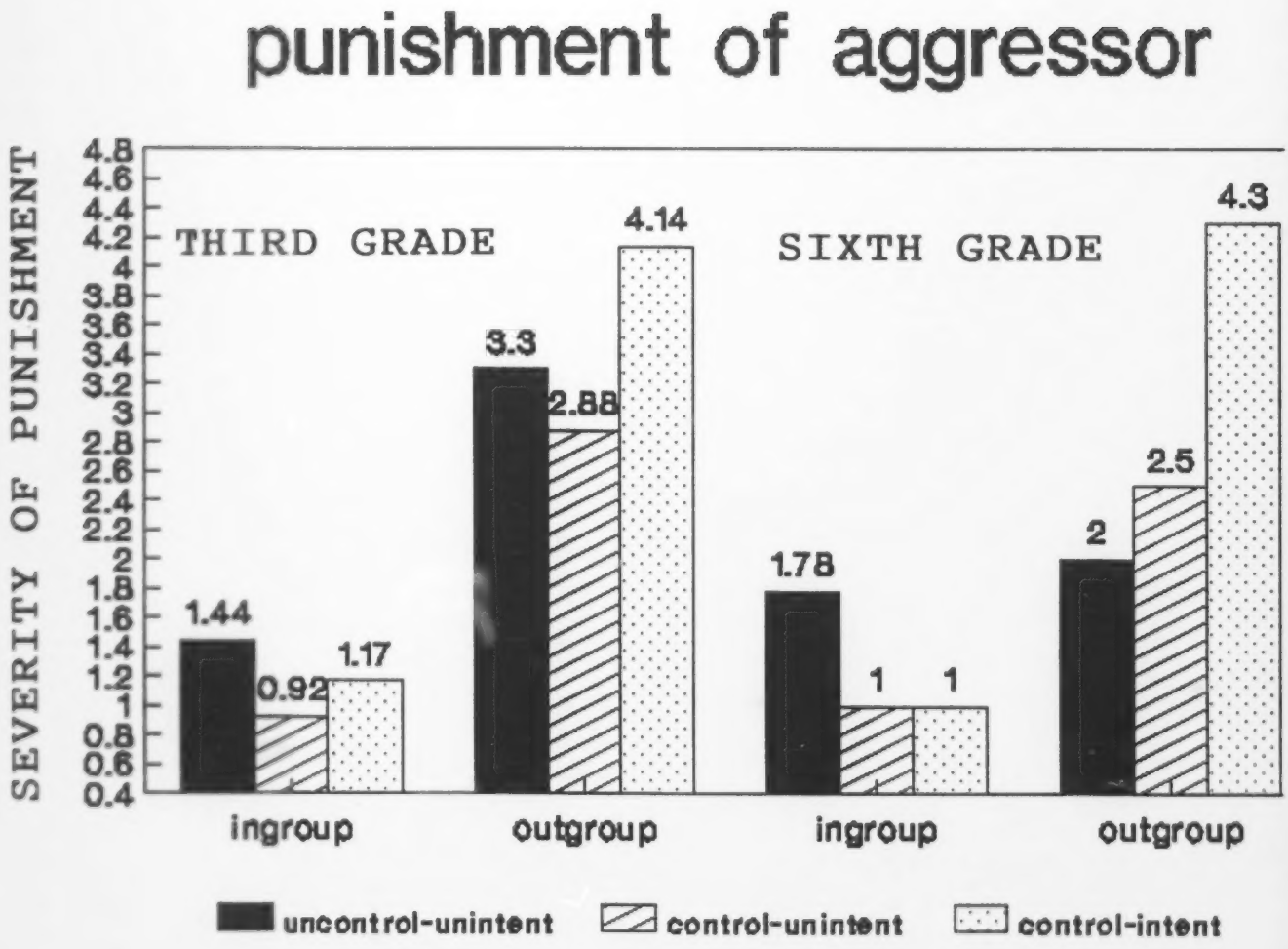

punishment of aggressor
SEVERITY OF PUNISHMENT
4.8
4.6
4.4
4.2
4
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
THIRD GRADE
SIXTH GRADE
1.44
0.92
1.17
3.3
2.88
4.14
1.78
1
1
2
2.5
4.3
ingroup
outgroup
ingroup
outgroup
uncontrol-unintent
control-unintent
control-intent

Figure 5

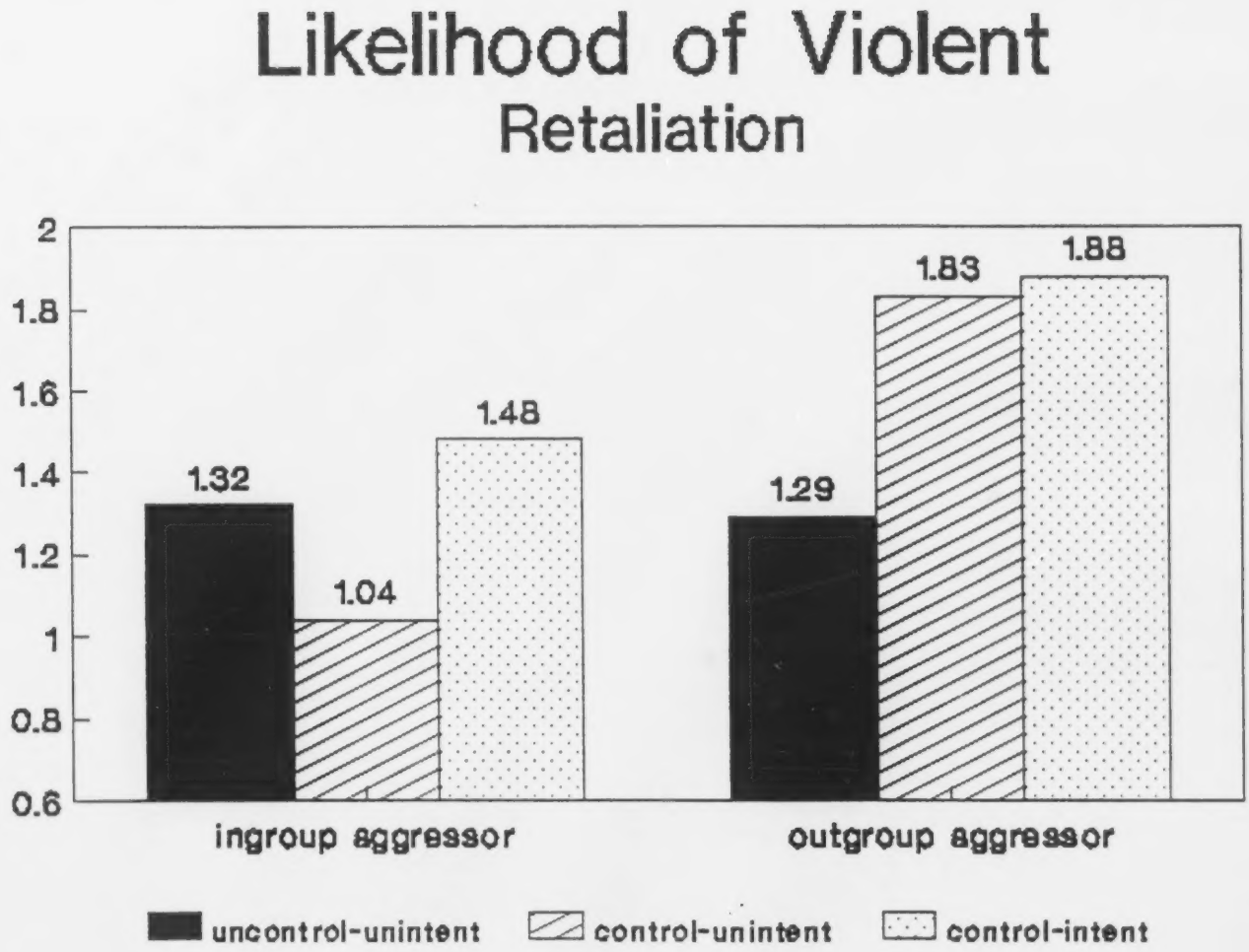
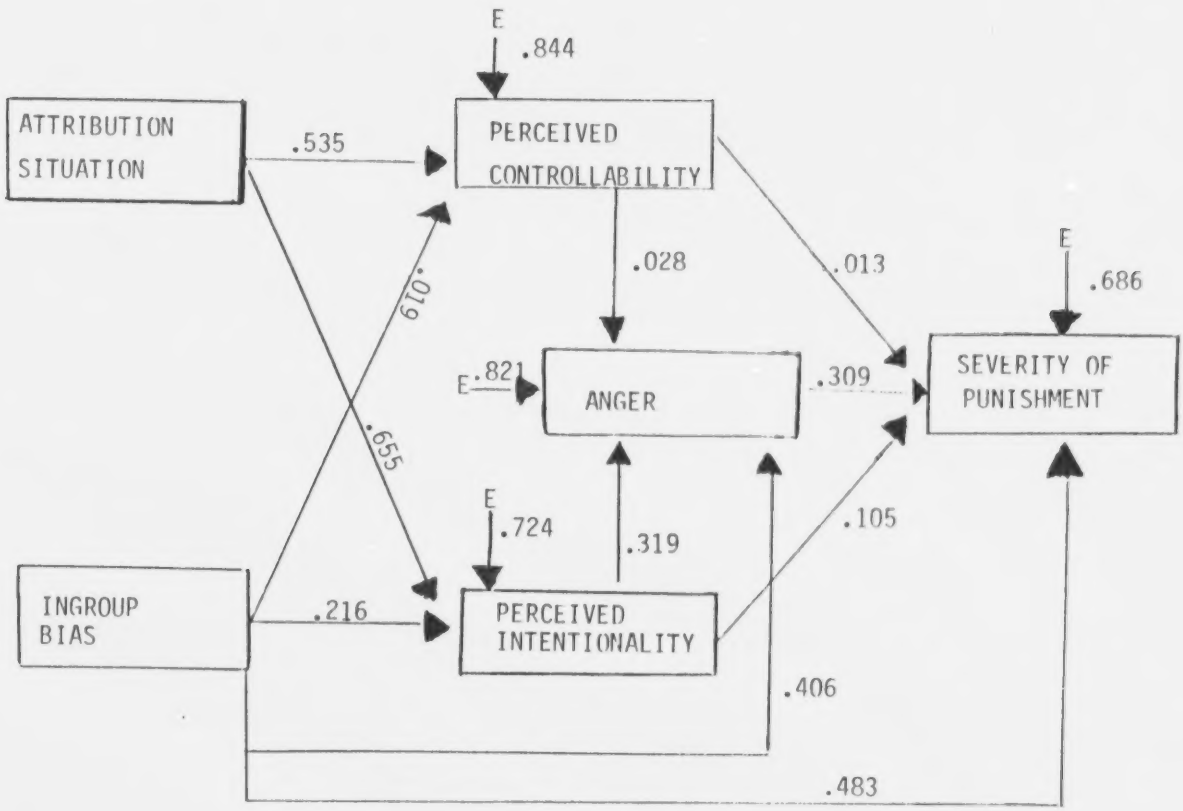

Likelihood of Violent
Retaliation
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1.32
1.04
1.48
1.29
1.83
1.88
ingroup aggressor
outgroup aggressor
uncontrol-unintent
control-unintent
control-intent

Figure 6

Figure 7

E.Q.S. Results From Testing Model




$X^2(4)=3.95$, $p=.41$

NFI=.984